

Appl. No. 09/923,009
Atty. Docket No. 8189
Amdt. dated December 8, 2003
Reply to Office Action of 09/30/2003
Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-4 (canceled).

Claim 5 (currently amended): The A method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

wherein the liquid jet streams rotate on a rotary axis and the ligaments are stationary.

Claim 6 (currently amended): The A method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

wherein the liquid jet streams are stationary and the ligaments rotate on a rotary axis.

Claim 7 (currently amended): The A method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;

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- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

wherein the liquid jet streams rotate on a rotary axis and the ligaments rotate on a rotary axis.

Claim 8 (original): The method of claim 7, wherein the liquid jet streams rotate in the same direction as the rotation of the ligaments.

Claim 9 (original): The method of claim 7, wherein the liquid jet streams rotate in a different direction as the rotation of the ligaments.

Claim 10 (currently amended): The Δ method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

wherein the liquid jet streams move in a circular motion.

Claim 11 (canceled).

Claim 12 (original): The method of claim 10, wherein the circular motion is constant.

Claim 13 (original): The method of claim 10, wherein the circular motion is reciprocated.

Claim 14 (currently amended): The Δ method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

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wherein the liquid jet streams comprise a kinetic energy which separates and distributes the pieces in a cross-sectional plane.

Claim 15 (currently amended): The A method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and
- d) drying the pieces to form the granular composition;

wherein the ligaments are cut with a liquid jet stream provided by a rotary head having from about 1 to about 128 individual jet nozzles.

Claim 16 (original): The method of claim 15, wherein the rotary head comprises from about 10 to about 128 individual jet nozzles.

Claim 17 (original): The method of claim 15, wherein the rotary head comprises from about 12 to about 16 individual jet nozzles.

Claim 18 (original): The method of claim 15, wherein the rotary head rotates at a speed of from about 500 rpm to about 6000 rpm.

Claim 19 (original): The method of claim 15, wherein the rotary head rotates at a speed of from about 2000 rpm to about 4000 rpm.

Claim 20 (original): The method of claim 15, wherein the rotary head rotates at a speed of from about 2500 rpm to about 3000 rpm.

Claim 21 (currently amended): The A method of claim 1, for producing a granular composition comprising the steps of:

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;
- c) cutting the ligaments with one or more liquid jet streams to form pieces; and

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d) driving the pieces to form the granular composition;

wherein:

the forming step comprises providing a pressure differential on the viscous liquid composition across an orifice plate resulting in a predetermined flow rate of the viscous liquid composition through the orifice plate to create the plurality of ligaments;

the cutting step comprises cutting the ligaments with one or more liquid jet streams to form pieces having a predetermined particle size;

the liquid jet streams are provided by the a rotary head comprising a predetermined number of individual jet nozzles having a predetermined rotational speed; and

the particle size of the pieces is proportional to the flow rate of the viscous liquid composition and inversely proportional to the number of individual jet streams and their rotational speed.

Claims 22-33 (canceled).

Claim 34 (currently amended): The ~~A~~ apparatus of claim 33, for producing a granular composition comprising;

- a) a viscous liquid composition supply;
- b) a ligament forming device in fluid communication with the viscous liquid composition supply;
- c) from about 1 to about 128 individual liquid jet nozzles provided on a rotary head, adjacent an outlet of the ligament forming device; and
- d) a driver.

Claims 35-41 (canceled).

Claim 42 (currently amended): The ~~A~~ method of claim 1, for producing a granular composition comprising the steps of;

- a) providing a viscous liquid mixture;
- b) forming a plurality of ligaments from the viscous liquid mixture;

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c) cutting the ligaments with one or more liquid jet streams to form pieces; and

d) solidifying the pieces to form the granular composition;

wherein the granular composition has a relative span factor of less than 1.0, wherein relative span factor is $(D_{0.9} \cdot D_{0.1})/D_{0.5}$ wherein $D_{0.9}$ is maximum granule size (diameter), $D_{0.1}$ is the minimum granule size and $D_{0.5}$ is the average granule size.

Claim 43 (canceled).